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10/595,300	08/15/2006	Pierre Kaufmann	06290/0204213-US0	7096
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EXAMINER				
MULL, FRED H				
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3662				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/595,300

**Applicant(s)**

KAUFMANN, PIERRE

**Examiner**

FRED H. MULL

**Art Unit**

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/5508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "3" has been used to designate both the control unit, shown to the bottom left of Fig. 4 and mentioned on p. 13, line 23, and the auxiliary control units, shown in bases A, B, C, and P in Fig. 4, and mentioned on p. 13, line 13.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities:  
On. p. 13, line 24, "bass" should be --bases--.  
Appropriate correction is required.

### ***Claim Objections***

3. Claim 1, p. 32 line 6 is objected to because of the following informalities:  
The word "disaligned" is not a proper word. It should be replaced with --not aligned--.
4. Claim 2, p. 33 line 33 is objected to because of the following informalities:

The phrase "a respective extension" should be --the respective extension--, because the phrase was previously used in claim 1, p. 32, lines 32-33.

5. Claim 18, p. 36, line 17 recites "each target". However, there is no antecedent basis for targets in the parent claims. The claim should either recite --at least one target--, or be dependent on one of claims 9-13.

6. Claim 22, p. 36, line 33 is objected to because of the following informalities:

The word "disaligned" is not a proper word. It should be replaced with --not aligned--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, p. 32, line 10, it states "a trajectory". In claim 1, p. 32, line 20, it states "a trajectory". It is unclear whether both instances are referring to the same trajectory, or whether they are referring to different trajectories.

In claim 22, p. 37, lines 2-3, it states "a trajectory". In claim 22, p. 32, lines 12-13, it states "a trajectory". It is unclear whether both instances are referring to the same trajectory, or whether they are referring to different trajectories.

In claim 1, p. 32, lines 13-17 and claim 22, p. 37, lines 5-9, the claims recite a transmitter, operatively associated with each of A, B, C, and S, in order to emit pulses. Each of A, B, C, and S is operatively associated with the transmitter by either directly or indirectly receiving the transmitted signals. But it doesn't follow that they are associated with the transmitter in order to allow the transmitter to emit pulses. The transmitter could emit pulses even if there were no receivers configured to receive them. Alternately, if this language is intending to state that there is a transmitter at each of A, B, C, and S, this does not appear to be consistent with the disclosure. Thus, the claim language does not clearly and accurately describe the system/process described in the specification.

In claim 1, p. 32, lines 18-23 and claim 22, p. 37, lines 10-15, the claims recite a receiver, operatively associated with each of A, B, and C, in order to receive the pulses. Each receiver would appear to only be operatively associated with the portions that either directly or indirectly transmit to it, as well as the portion it is attached to, and not to other portions. Thus, a receiver 2 in Fig. 4 would only be associated with the transmitter base A and satellite re-transmitter S, as well as the base it is attached to. Alternately, this language might be intending to state that there is a receiver at each of A, B, and C. However, due to the similar language cited above, referring to the transmitter, which does not appear to occur at each of A, B, C, and S, it is not clear that this is the correct interpretation. Thus, the claim language does not clearly and accurately describe the system/process described in the specification.

In claim 1, p. 32, lines 18-23 and claim 22, p. 37, lines 10-15, the claims recite a receiver receiving pulses in a trajectory covering the distance between S and the base (A, B, or C) associated with the receiver. It's not clear what this means. A, B, and C have previously been stated to be fixed (claim 1, p. 32, line 5; claim 22, p. 36, line 32). Thus, A, B, and C, and the receivers attached to them, are not in a trajectory. At least, not according to the reference frame applicant appears to be using (Earth-Centered, Earth-Fixed, ECEF). Thus, the claim language does not clearly and accurately describe the system/process described in the specification.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3-6, 14-17, 22, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by IDS document Chang.

In regard to claims 1 and 22, Chang discloses:

a first, a second, and a third base ( $R_1$ ,  $R_2$ ,  $R_3$ , Fig. 1; col. 1, lines 66-67; col. 3, lines 7-13), which are fixed in relation to the earth (col. 12, lines 21-23), but spaced away and not aligned in relation to each other (col. 9, lines 36-38 and 47-51) and each having a previously known location (p. 1, line 67);

a space platform ( $R_0$ ; col. 1, lines 65-66), visible from the fixed bases and which moves to successive positions, as a function of time, according to a trajectory that is inclined in relation to the rotation axis of the earth (col. 4, lines 27-29);

a transmitter, operatively associated with each of the parts defined by the fixed bases and the space platform, said transmitter emitting pulses in a determined frequency, each pulse in a predetermined reference instant ( $a_1$ , arrowhead toward  $R_0$ ; col. 2, lines 1-3; col. 3, lines 45-50);

a receiver operatively associated with each fixed base ( $a_2$ , arrowhead from  $R_0$ ,  $a_1$ ,  $a_3$ ; col. 2, lines 1-3; col. 3, lines 45-50); and

a control unit which is operatively connected to both the transmitter and the receiver (col. 3, lines 40-41; col. 4, lines 1-19), in order to calculate, for each pulse emission instant, the lateral edges of a tetrahedron, whose vertices are defined by the three fixed bases, based upon the determination of the propagation time of each pulse, between the space platform and each fixed base in order to allow determining a respective extension of the trajectory of the space platform, while the latter is visible by the fixed bases ( $a_1$ ,  $a_2$ ,  $a_3$ ; col. 5, lines 43-61), where the six tetrahedron edges are  $a_1$ ,  $a_2$ ,  $a_3$ ,  $R_1$ - $R_2$ ,  $R_2$ - $R_3$ , and  $R_3$ - $R_1$  and the four tetrahedron vertices are  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_0$ .

In regard to claim 3, Chang further discloses:

another transmitter installed in the second fixed base (B) in order to emit pulses in a determined frequency, each pulse in the same predetermined reference instant of each pulse emitted by the transmitter provided in the first fixed base and containing identification of the second fixed base and of the emission instant of said pulse (col. 4,

lines 1-19), where  $R_2$  has a transmitter to transmit in response to receiving  $R_1$ 's signal through  $R_1$ ;

another receiver provided in the third fixed base in order to receive and identify the pulses sent by the second fixed base and transmitted by the space platform (col. 4, lines 1-19, where  $R_1$  also has a receiver, and claim 1 only required one receiver, the one in  $R_3$ ) the control unit calculating, for each pulse emission instant, the lateral edges of a tetrahedron, whose vertices are defined by the three fixed bases, based upon the determination of the propagation time of each pulse, between the space platform and each fixed base in order to allow determining a respective extension of the trajectory of the space platform, while the latter is visible by the fixed bases ( $a_1$ ,  $a_2$ ,  $a_3$ ; col. 5, lines 43-61), where the six tetrahedron edges are  $a_1$ ,  $a_2$ ,  $a_3$ ,  $R_1$ - $R_2$ ,  $R_2$ - $R_3$ , and  $R_3$ - $R_1$  and the four tetrahedron vertices are  $R_1$ ,  $R_2$ ,  $R_3$ , and  $R_0$ .

In regard to claims 4-5, Chang further discloses that the control unit is operatively connected to the second and to the third fixed bases through other respective communication means provided in each one of said fixed bases (col. 4, lines 1-19), where  $R_2$  and  $R_3$  have transmitters that allow them to communicate to control unit 16 via  $R_0$  and  $R_1$ . Control unit 16 is directly connected to  $R_1$ .

In regard to claim 6, Chang further discloses that each of the first, the second and the third fixed bases is provided with a respective control unit, said control units defining the other communication devices and being operatively connected to another control unit remote in relation to those of said fixed bases (col. 3, lines 12-33), where the devices listed as RNs each have their own processor.

In regard to claim 14, Chang further discloses that the fixed bases are situated on the earth's surface (col. 12, lines 21-23).

In regard to claims 15-17, Chang further discloses that the control unit calculates, based on the time differences of propagation of each pulse between the space platform and a corresponding fixed base, for consecutive pulses, the equation of motion of the space platform (col. 6, lines 30-35; col. 12, line 1 to col. 13, line 18).

In regard to claim 33, Chang further discloses that it includes steps for correcting the time delays in the transmission of pulses through the communication device (col. 4, lines 50-53).

9. Claims 1-2, 4-5, 7-8, 14-18, 21-23, 28, and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Knight.

In regard to claims 1 and 22, Knight discloses:

a first, a second, and a third base (10, 20, Fig. 1), which are fixed in relation to the earth, but spaced away and not aligned in relation to each other and each having a previously known location (abstract; col. 4, lines 62-67);

a space platform, visible from the fixed bases and which moves to successive positions, as a function of time, according to a trajectory that is inclined in relation to the rotation axis of the earth (col. 6, line 62 to col. 7, line 11; col. 7, lines 36-50);

a transmitter, operatively associated with each of the parts defined by the fixed bases and the space platform, said transmitter emitting pulses in a determined frequency, each pulse in a predetermined reference instant (10);

a receiver operatively associated with each fixed base (20); and

a control unit which is operatively connected to both the transmitter and the receiver (50), in order to calculate, for each pulse emission instant, the lateral edges of a tetrahedron, whose vertices are defined by the three fixed bases, based upon the determination of the propagation time of each pulse, between the space platform and each fixed base in order to allow determining a respective extension of the trajectory of the space platform, while the latter is visible by the fixed bases (20; abstract, line 7; col. 5, lines 1-20), where the six tetrahedron edges are the lines connecting each of 20 and the ranges from them to the satellite, and the four tetrahedron vertices are each of 20 and the satellite.

In regard to claims 2 and 23, Knight further discloses that the transmitter is installed in the first fixed base (10) in order to emit pulses in a determined frequency, each pulse in a predetermined reference instant and containing identification of said first fixed base and of the emission instant of said pulse (col. 5, lines 51-54; col. 6, lines 34-44), each pulse being transmitted to all fixed bases through a communication device provided in the space platform (col. 4, lines 47-50).

In regard to claims 4-5, Knight further discloses that the control unit is operatively connected to the second and to the third fixed bases through other respective communication means provided in each one of said fixed bases (Fig. 1), where 20 communicate with control unit 50 via network 40.

In regard to claim 7, Knight further discloses that the communication device is a transceiver (col. 4, lines 47-50).

In regard to claim 8, Knight further discloses, in each fixed base, a respective precision clock (110, Fig. 2 and 3), the precision clocks being synchronized with each other (100; col. 5, lines 51-54; col. 6, lines 34-41), where each clock is synchronized to Universal Time via GPS determined timing.

In regard to claim 14, Knight further discloses that the fixed bases are situated on the earth's surface (abstract).

In regard to claims 15-17, 28, and 30-31, Knight further discloses that the control unit calculates, based on the time differences of propagation of each pulse between the space platform and a corresponding fixed base, for consecutive pulses, the equation of motion of the space platform (col. 6, line 62 to col. 7, line 11; col. 7, lines 36-50).

In regard to claim 18, Knight further discloses that the control unit calculates the position of each target from the equation of motion of the space platform (col. 5, lines 27-33).

In regard to claim 21, Knight further discloses that the communication device utilizes radio-waves (col. 1, lines 28-31).

***Allowable Subject Matter***

10. Claim(s) 9-13, 19-20, 24-27, 29, and 32 would be allowable if amended to overcome the rejection(s) under 35 U.S.C. 112, set forth in this Office action, and if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRED H. MULL whose telephone number is (571)272-6975. The examiner can normally be reached on Monday through Friday from approximately 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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